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ORIGINAL ARTICLES.

A CASE OF EPITHELIOMA OF THE OCULAR
CONJUNCTIVA.—EXCISION.—MANY
RELAPSES, BUT FINAL CURE.

BY CHARLES J. KIPP,

NEWARK, N. J.

(*Microscopical Examination by Adolf Alt.*)

MRS. A. L., born in the United States, 26 years of age, living at Stillwater, N. J., a well-developed and healthy looking woman, came to me at the Newark Eye and Ear Infirmary for the first time January 3, 1885. She stated that after an attack of measles, when she was eight years old, a small swelling, like a pimple, was first noticed on the white of the eyeball, between cornea and outer canthus. Nothing was done for this swelling till she was twenty years old (six years ago), when it had attained considerable size. It was then attacked by a country practitioner with knife and caustics, and apparently removed. The growth reappeared, however, very soon, but remained small and gave her no pain or uneasiness for two years. Since then it has been growing slowly to its present size. At her first visit to me the ocular conjunctiva between cornea and outer canthus was the seat of a new growth about the size of a ten-cent piece (10 mm. in diameter). It was between one and two mm. in height, and was most elevated at the corneal margin. The growth over-

lapped the outer fourth of the cornea, but was not adherent to it. It was of a yellowish-red color and gelatinous consistency. It was very vascular, large conjunctival and subconjunctival vessels coming from the lower part of the equator, passing into the growth. The growth was slightly movable over the sclerotic. The eye was otherwise normal. It was E. and V^{5/4}. On January 7, 1885, I made a most thorough excision of the whole growth, undermined the conjunctiva above and below, and by making an incision above and below in the conjunctiva some distance from margin of growth was enabled to cover nearly all of the defect.

The wound healed without reaction, and I discharged the patient about a week after the operation. She went to her home and I did not see her again till July 27, when I found the eye free from irritation and saw no signs of a relapse. A few weeks after this visit, the patient noticed the reappearance of the growth at the sclero-corneal junction, but was unable to visit me again till November 29, same year. At this visit I found that the growth had again attained its former size, but its situation was somewhat changed; it now covered more than the outer third of the cornea and extended less on the sclerotic than formerly. It was now adherent to the cornea. I again excised the entire growth, taking with it the outer layers of the cornea as far as the growth was connected with it. After the excision of the growth, I applied the galvano-cautery to whole of the deficiency. The operation was not followed by much reaction. Up to March 24 of the following year (1886), the eye was quiet. Then a small area in the upper margin of the scar became red and slightly raised. I at once destroyed this raised spot with the galvano-cautery. In June, same year, I saw the patient again, and found red and raised areas in three different parts of the periphery of the conjunctival scar. I applied the galvano-cautery again to each, and in about two weeks the eye was again quite without injection. On July 29 I saw the patient, and could find no signs of a relapse, but a month later, August 26, I found two suspicious looking places in periphery of the conjunctival scar and again used the galvano-cautery. Two months after the last visit, October 2, I discovered another slight relapse which was also

destroyed by the galvano-cautery. *During the following three years the eye was free from a return of the growth, but in May, 1889, she returned home, and I found that a part of the upper margin of the conjunctival scar, close to the sclero-corneal margin, was again red and somewhat raised.* I again used the galvano-cautery and burned away the tissue for some distance away from the inflamed portion. Since then there has been no return of the growth. At the time of this writ-



FIG. 1.

ing, November, 1902, more than thirteen years after the last cauterization, the eye is entirely free from signs of disease, and I think we may regard the case as cured.

Microscopical examination of growth by Adolf Alt, M.D.

Dr. Kipp sent me two slides, marked one and two, for microscopical examination.

No. 1 represents a small tumor and a larger piece of apparently normal corneal tissue.

The tumor is roundish. It is covered with several layers of epithelial cells, which in places are largely increased in number and have grown into the underlying connective tissue. The tumor itself consists of some connective tissue and innumerable nests and some large pegs of epithelial cells divided from each other in places by broad connective tissue fibres, so that the tumor has a lobulated appearance. It is very vascular. At, what I consider as the corneoscleral margin, its tissue contains a considerable amount of pigmented

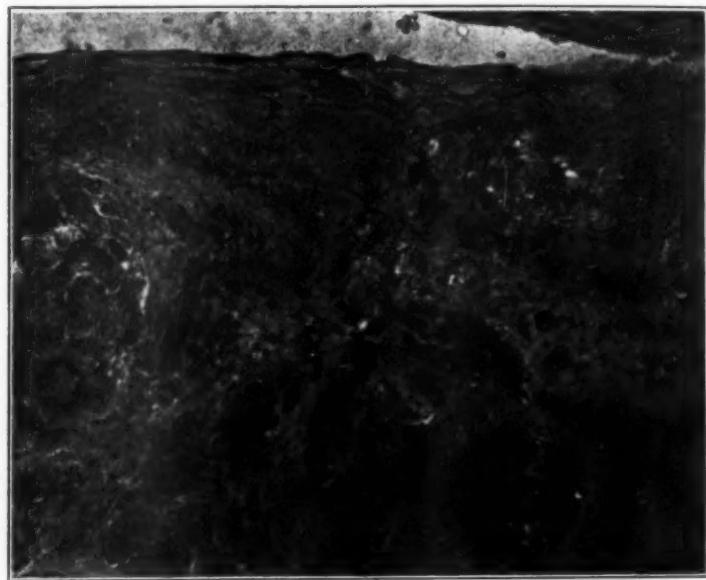


FIG. 2.

epithelial cells. (Fig. 1). The base, as far as it is included in this section, shows a small round cell infiltration.

Although the specimens are old and have to a great extent lost their staining, it seems quite plain that a great many of the cells, especially in some of the pegs (see Fig. 2), are undergoing a regressive metamorphosis. These are probably the older parts of the tumor. In other pegs (see Fig. 3) this is not the case. The cells in these show sharp outlines and have retained the stain better.

Diagnosis: Epithelioma conjunctivæ.

A Case of Epithelioma of the Ocular Conjunctiva. 357

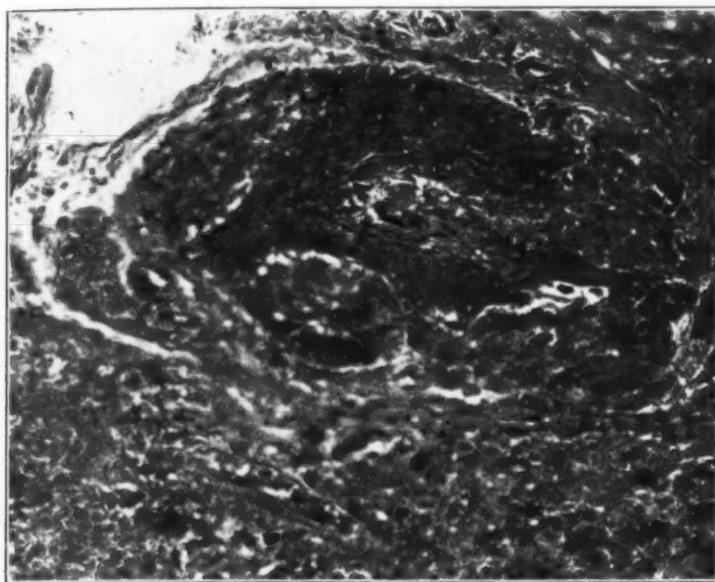


FIG. 3.

No. 2 is a flatter tumor, also, covered by epithelium, which, however, in the center is necrosed. Here numerous leucocytes cover a depression in the tumor tissue, evidently a microscopical ulceration.

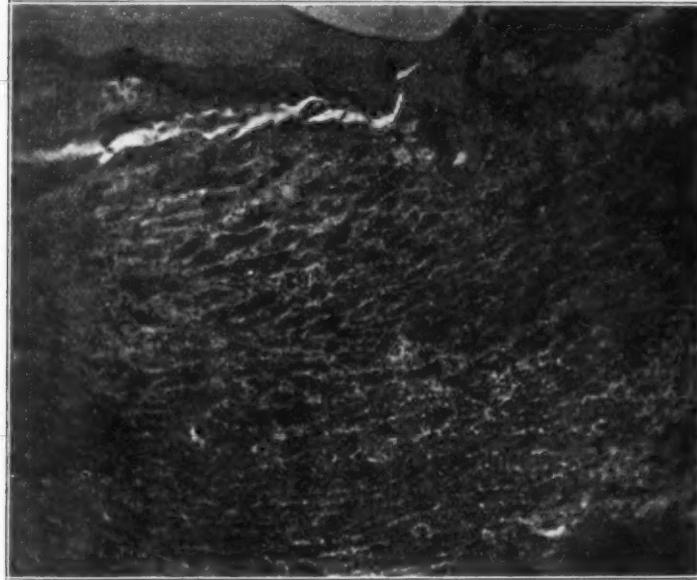


FIG. 4.

The bulk of the tissue in this section is again made up of epithelial cylinders, separated from each other by connective tissue. (Fig. 4). This tissue is by far not as vascular as that of No. 1 in one-half of the tumor, probably the corneal half, while the other, the conjunctival portion, is extremely vascular with a number of hæmorrhagic spots.

Diagnosis: Epithelioma conjunctivæ.

The two specimens agree in every particular with the ones from two epithelial tumors of the corneoscleral border which I have described as cured by myself by means of galvanocautery in previous numbers of this journal.

I may add that one of the patients is at present under my treatment for an attack of trachoma, and that there has been no relapse in the thirteen years, since by means of the cautery I succeeded in eradicating the epithelioma.

TWO CASES OF CONGENITAL ORBITAL TUMORS.

BY ADOLF ALT, M.D.

EARLY in November, 1902, a 6 months old baby was brought to my clinic at the Marion-Sims-Beaumont College of Medicine with the statement, that soon after birth a small round swelling had been noticed by the parents, which was situated under the temporal side of the left upper lid. The family physician, thinking it was an abscess, had made an incision through the skin over the swelling about three months previous to their visit at the clinic, and is said to have desisted when blood flowed.

When I saw the child, a round tumor the size of a hazelnut pushed the temporal half of the left upper eyelid forward and slightly displaced the eyeball down and inward. The skin was adherent to this tumor where the former incision had been made. There was no inflammatory symptom. The tumor could be pressed somewhat into the orbit, but was itself not compressible. Coughing and stooping did not influence it.

From these symptoms I supposed I had to deal with a cystic tumor and advised its removal.

The parents consenting I enucleated the tumor carefully



FIG. 1.

a few days later. During the removal a thin part of the wall gave way, and yellowish-brown, viscid, semi-fluid contents oozed partially out.

On microscopical examination, (Fig. 1) the tumor proved

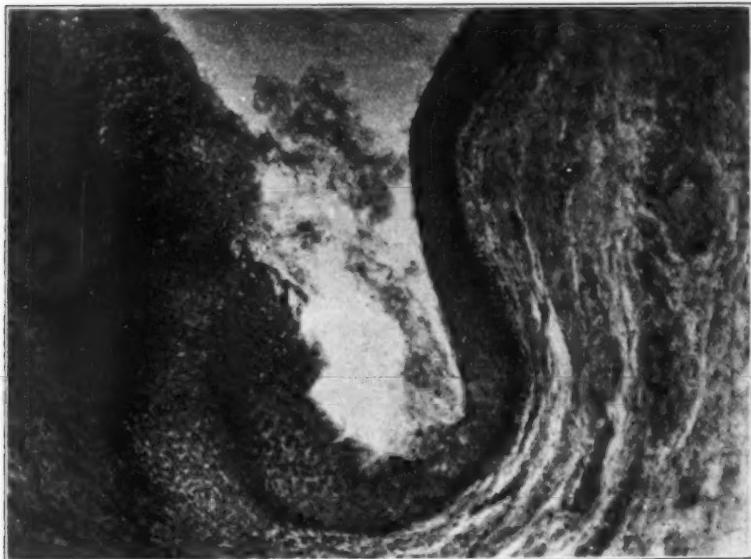


FIG. 2.

to be a cyst, lined with very thick dermoid epithelium. The contents consisted of exfoliated epithelial cells and oil globules.

In one place the otherwise uniform epithelial lining was altered considerably. Here its thickness assumed a very much greater degree than in the other parts, but its cells were evidently undergoing a retrogressive metamorphosis and stained but very poorly. The increased thickness and death of the epithelial cells was evidently due to an infiltration with an immense number of leucocytes and a beginning formation

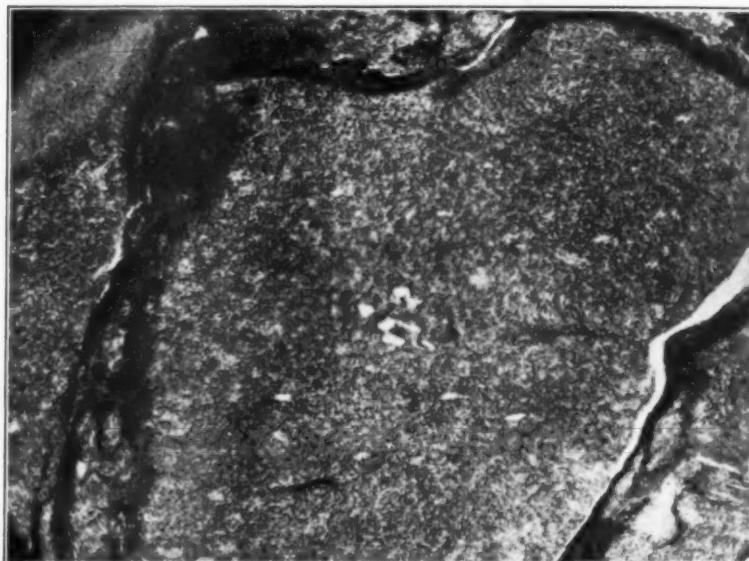


FIG. 3.

of granulation tissue. This was probably at the site of the former incision. (Fig. 2).

Diagnosis: *Dermoid cyst of orbit.*

A few days later, W. B., aged 4 months, was brought to my office on account of a swelling behind the nasal half of the left upper lid. This swelling had been noticed soon after birth and had since gradually increased in size.

When I saw the child, which was otherwise perfectly strong, healthy and well formed, I found a bluish elevation which pushed the nasal half of the upper lid forward and had, also, about the size of a hazelnut. The tumor could be easily

compressed and grew larger when the child coughed and when the head was allowed to hang down.

From these symptoms I thought that I had to deal with a vascular tumor, probably a teleangiectatic one, and advised its removal.

I few days later, I proceeded to do so. Unfortunately the vascular tissue reached upward into the skin and began to bleed profusely as soon, as I made the first incision. After that it became quite difficult to proceed with the operation, and when I finally had, as far as I could see, removed all abnormal tissue, the child was quite pale from loss of blood.

The tumor after its removal was collapsed to only about half the size it had in the orbit, and it further shrank considerably in the hardening process.

Microscopical examination revealed as usual in these cases, a lobulated tumor, the lobules of which consisted of densely packed capillary blood vessels. There are several larger veins in or near the center of each lobule. (Fig. 3).

Diagnosis: *Teleangiectasia of the orbit.*

THE PREVENTION OF THE BLENNORRHœA OF
THE NEWLY BORN BY MEANS OF CREDÉ'S
METHOD.*

(From the Obstetric Clinie at Dresden.)

BY PRIVY-COUNCILOR PROF. G. LEOPOLD.

(Translated by A. Alt, M.D.)

(Continued from last issue.)

LET us consider these cases a little further. The first case (No. 391, March); primipara with normal pelvis. Time of parturition 9 hours, 25 minutes. Rupture of membranes 2 minutes before birth. Puerperium normal, yet gonococci were found in the secretions from vagina and urethra. On the fifth day the infant, which weighed 2820 grammes, showed a blennorrhœa of the right eye. Although it was at once treated, the left eye was, also, blennorrhœic on the 8th day. A small opacity appeared in the cornea, but disappeared in a few days when the lids were cured.

In this case, as was fully proven, Credé's method had not

*Berliner Klin. Wochenschr., 1902, No. 33.

been employed carefully, in the hurry of the overfilled obstetric ward. Such an explanation could never be allowed in private practice where there is plenty of time.

Both the second and third cases happened in the month of July. At the beginning of January and July the employes at my clinic are changed. There are new assistants, new externes, new midwives and new pupils. Thus, these two months are by us looked upon as the most dangerous ones, because everyone has to get acquainted with new conditions. Even Credé's method must be drilled in and learned.

Certain it is that these two cases in July, 1898, were due to the insufficient training of the midwife; that they might have been avoided, may be assumed from the invariable good results in the year 1898. These three cases, then, are easily explained and pardonable exceptions from the rule. If we deduct them from the 2146 newly-born during 1898, not a single one of 2143 infants was infected, although, as proven by the microscopical examination, 98, and according to the clinical aspect at least 200 of the mothers had gonorrhœa.

Similar cases may here and there happen in other clinics, too, and have happened. When, however, Credé's method is exactly employed, if the pupils are carefully watched, there is no longer any blennorrhœa; we even say it should not happen at all, not even as an exception in any clinic and obstetric institution, especially in the smaller ones, where things are more easily watched and where there is more leisure.

It has been repeatedly stated than in births with early rupture of the membranes, of long duration, with frontal and other abnormal positions, with a narrow pelvis, after forceps deliveries, the eyes of the newly born are especially prone to become blennorrhoid or to be irritated by Credé's instillation.

I cannot assent to this from my experience. For, aside from the three cases mentioned, no other infant had blennorrhœa, and the abnormal irritations which Cramer reported, we have never seen. I need not mention that among 2282 confinements a great many were abnormal, etc.

After all this, the standpoint which I must maintain as based on my experience of many years, is self-evident, especially concerning the question whether Credé's method should be made generally obligatory.

It seems to me, it is high time this should be done. Its benefits should be given to every one.

There will be hardly any serious objections to its introduction into private practice. If in any case the infant's father should object, it can, of course, not be enforced; yet the statements as to the possibilities of a serious eye disease will in some cases be sure to overcome the objections, while, in others the method must be omitted. Then the law under which the midwives must report all infected cases, must see to it that the quickest and best possible aid is furnished the diseased eyes.

As to the bitterly-contested point, whether nitrate of silver should be retained for these instillations or another and less irritating remedy be substituted, I, with Runge, Fehling, and Gusserow, maintain that nitrate of silver—and in order to remove its irritating qualities, in a 1 per cent solution—leaves nothing to be desired with a view to safety, innocuousness and simplicity.

Zweifel experimented on a large number of cases with a saturated solution of acetate of silver, while otherwise adhering strictly to Credé's method and instilling one drop only into the eyes of the newly-born. His results were brilliant. He selected acetate of silver because it will dissolve in water only in the proportion of 1.25 to 100. Thus a stronger concentration of the solution and consequent graver irritation of the eyes is out of question, especially when after this instillation a few drops of salt water are dropped into the eyes to neutralize the superfluous acetate of silver.

In view of the fact that at a later obligatory introduction of this method into the practice of midwives, the latter should be taught the simplest and surest possible method, it seems to me, that the subsequent instillation of two different solutions, first silver acetate and then salt solutions, as Zweifel proposes, may well be dispensed with. For, of 172 newly-born into whose eyes I had one drop of a solution of silver acetate instilled at once after birth, without following this with an instillation of a salt solution, 10 only showed some slight irritation in the first 24 hours. This disappeared, however, without treatment. None of the others showed any irritation. Their eyes remained white. No early infection was

observed. Consequently the instillation of the salt solution is unnecessary.

In 191 infants the instillation of a 1½ per cent. silver nitrate solution gave brilliant results, no irritation, no blennorrhœa.

Induced by the excellent results obtained by Runge and Gusserow with a 1 per cent. silver nitrate solution, I intend from now on to employ this in my clinic and I expect no irritation and certain prevention.

Postscriptum. From April 2nd to July 31st, 1902, a 1 per cent silver nitrate solution was instilled into the eyes of 698 infants. No early infection was observed, and but one late infection. Irritation did not appear.

PAMPHLETS RECEIVED.

- “Tuberculosis of the Eye,” by C. S. Bull, M.D.
- “Genesis of Glioma in Neuralgia,” by B. Pusey, M.D.
- “Anatomy of Ocular Muscles,” by J. E. Colburn, M.D.
- “Two-fold Use of Haab’s Magnet in Eye Surgery,” by W. J. Weill, M.D.
- “Suprarenal Gland in Ophthalmic Practice,” by G. E. de Schweinitz, M.D.
- “Malarial Infection a Potent Factor in Asthenopic Conditions,” by J. L. Hiers, M.D.
- “Postoperative History of Fifty Cases of Simple Chronic Glaucoma,” by C. S. Bull, M.D.
- “Further Clinical Experiences with Haab’s Giant Magnet,” etc., by A. Barkan, M.D.
- “Gummatus Invasion of the Bone, Skin, Conjunctiva, Retina and Uveal Tract,” by A. Barkan, M.D.
- “Case of Embolism (Thrombosis?) of a Branch of the Central Retinal Artery; Forceful Massage; Recovery,” by A. Barkan, M.D.
- “The Lesions in a Series of Eyes Which Produced Various Types of So-Called Sympathetic Disturbance,” by G. E. de Schweinitz, M.D., and E. A. Shumway, M.D.

MEDICAL SOCIETIES.

PROCEEDINGS OF THE OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.*

W. ADAMS FROST, F.R.C.S., Vice-President, in the Chair.

Thursday, October 16, 1902.

DISLOCATION OF THE EYEBALL THROUGH THE PALPEBRAL APERTURE.

MR. H. C. BALDWIN, in a paper communicated by Mr. Nettleship, recorded a case of dislocation of the eyeball through the palpebral aperture. The patient was a woman, who struck the left eye against a projecting gas bracket. Within fifteen minutes Mr. Baldwin saw her, when the eye was found gouged out and was projecting between the lids. By gentle taxis he was able to reduce it readily. The vision completely recovered, and, with the exception of a slightly crinkled appearance at the outer edge, no visible scar remained.

MR. BEAUMONT said he had seen a case of dislocated eyeball in a child after a difficult delivery; here also the eye was restored to its normal position after twenty-four hours.

BIRTH PALSY OF THE SIXTH AND SEVENTH NERVES.

MR. NETTLESHIP recorded a case of birth palsy of the sixth and seventh nerves on the same side. The mother of the patient was thirty years of age, and she had a slightly contracted pelvis. It was a brow presentation, and forceps were used, which left a scar over the temporal bone near the ear. There was another scar on the other side, but higher up. The child was born at full term and showed no sign of asphyxia; there was no swelling of the eyelids. Within a few hours of birth it was noticed that the child squinted inwards with the right eye, the lid remained open, and the facial muscles on the same side were paralyzed. The right

*British Medical Journal.

eye could not be turned outwards at all, and the pupil did not react briskly. On the fifth day the condition remained unaltered, and the child took no notice of a noise made near its head. A slight haemorrhage was then noticed in the right fundus. Just behind the right ear was a slightly elevated ridge and groove where the forceps had pressed. The condition rapidly improved, and when nine months old nothing abnormal was noticed except a slight weakness of the orbicularis. He can now hear a watch equally well on both sides. Mr. Nettleship thought that the lesion was intracranial, and that the two nerves were affected in their course most likely by haemorrhage. From the fact that the two nerves recovered at the same time he concluded that the nerve trunks and not the nuclei were the parts which were pressed upon by the blood clot. He did not know of any other recorded case in which these two nerves were involved in a similar lesion.

MR. FISHER thought that an intradural haemorrhage would have to be very large to affect the nerves in the way described, and that a more likely explanation was that the facial nerve was nipped by the forceps as it emerged from the stylo-mastoid foramen, and that the sixth nerve was affected by a haemorrhage from the inferior petrosal sinus.

PERFECT RECOVERY OF VISION IN A CASE OF LEBER'S DISEASE.

MR. NETTLESHIP described a case of perfect recovery of vision in a case of Leber's disease. The patient was a tutor, 28 years of age, whose sight failed six months before. The vision was $\frac{1}{60}$ and J.16 in each eye. There was a central scotoma for green, but red could be seen much better. The choroid was dark in appearance and the knee jerks were brisk. The patient's brother came under Mr. Doyne's care recently for a similar condition, when it was found that the original patient had quite recovered his sight, and had since become ordained and had subsequently become a schoolmaster. He mentioned another case, in which two brothers were affected, and here also one was said to have recovered his sight.

THE CHAIRMAN mentioned a case in which a man, aged 35,

informed him that his brother had had the disease, but had partially recovered.

MESSRS. ORMOND, JOHNSON, TAYLOR and LAWFORD all mentioned cases in which improvement had taken place, but in none had recovery taken place to so great an extent as in Mr. Nettleship's case.

DERMOID CYST OF THE ORBIT.

DR. LEDIARD communicated a case of dermoid cyst of the orbit which had dislocated the eyeball and occupied the antrum.

CARD SPECIMENS.

The following were shown: Mr. A. Quarry Silcock: Detachment of the Retina. Mr. C. H. Walker: Embolism of the Inferior Temporal Branch of the Retinal Artery.

Friday, November 14, 1902.

A. STANFORD MORTON, F.R.C.S., Vice-President, in the Chair.

AVULSION OF THE EYEBALL BY MIDWIFERY FORCEPS.

MR. SIMEON SNELL (Sheffield) related this case.

The child was admitted on the day following its birth into the Sheffield Royal Infirmary (in June, 1902) with the left eyeball lying on the cheek, being connected to the orbital tissues by little more than bands of conjunctiva. There was a mark of the forceps above the left eyebrow. The particulars supplied by the medical man in attendance showed that the mother was a small woman, with a very contracted pelvis. The pelvis was so small that it was thought it would be necessary to use the perforator, but ultimately the child was extracted by the aid of forceps and the eyeball was found in the condition stated. The globe was removed by severing the slight bands that held it to the orbital tissues. The optical nerve was found to have been torn through, leaving fully an inch attached to the eyeball.

PARALYSIS OF THE UPWARD MOVEMENTS OF THE EYEBALLS.

MR. SIMEON SNELL related a case.

The patient was a man, aged 50. After being at work all day he returned home at 5 P.M., when he had his tea and fell asleep, and remembered nothing until 4 o'clock the next morning. His wife called him three times during the night, but he recollects nothing of it. When he awoke he felt very giddy, and had difficulty in standing. He again went to sleep, and remained so until 8 A.M. He then awoke with severe pain in the forehead and diplopia. When seen by Mr. Snell three days later (July 25) the eye movements were normal in all directions except upwards, but either together or separately he was unable to raise them upwards. On attempting to look up, the upper lids made the normal elevation, but the eyeballs did not move, and a rim of sclerotic was left visible above the cornea. The attempt also brought about contraction of the occipito-frontalis muscle and wrinkling of the forehead. Vision in each eye was $\frac{1}{6}$. At eight feet distance from an electric lamp, and on the same level he saw two lamps, one being about an inch above the other. There was absence of other nerve conditions. The diplopia disappeared two days later, and at the end of August he was able to move the eyes upwards, either singly or together, perfectly.

DR. ALDREN TURNER regarded the case as due to a vascular lesion, but there was no actual localizing symptoms as to where this was situated.

MR. MARCUS GUNN drew attention to the fact that, although some patients were quite incapable of looking upwards when told to do so, yet if they were asked to follow an object gradually moved upwards they could do so quite well. He asked if this had been tried in Mr. Snell's case.

MR. SNELL, in reply, said the patient was utterly unable to follow with the eyeball any moving object upwards.

**NYCTALOPIA (RETINITIS PIGMENTOSA) OCCURRING
IN FIVE GENERATIONS.**

MR. SIMEON SNELL mentioned the case of a man, aged 46, who since childhood had found great difficulty in going about in the dark. Though gradually failing, the sight had

become so bad during the last two years and a half that he was incapable of following his occupation. He was now incapable of finding his way about in the dark, the R V = $\frac{2}{60}$ and the left $\frac{1}{60}$. The ophthalmoscope disclosed a typical picture of retinitis pigmentosa. The peculiar interest centered in the fact that he was a member of a family in which large numbers were similarly affected with night blindness. The first who was known to be affected was his great-grandfather. He left an only daughter who was afflicted and from her had descended numerous instances of nyctalopia. Beginning with the great grand-father there had been a total of 69 individuals and of this number there was good evidence that 28 were affected with night blindness. The patient's father had 11 children, 5 were afflicted and 6 were normal sighted; the patient himself was the father of 11 children, 7 being affected, namely, 5 boys and 2 girls, the rest escaped. There was no evidence of consanguinity in the family. Nyctalopia descended in all instances without a break; no generation was skipped over, and it ran equally through the male and female lines. There was no instance of a normal-sighted son or daughter by the grandmother having transmitted the malady to their children or grandchildren. Fifteen of the afflicted ones were females, 10 males and of 3 the sex was not ascertained. Night blindness showed itself in early childhood. At about the age of 40, some more and some less, the affected ones had become practically blind.

THE NECESSITY FOR THE USE OF COLOR NAMES IN A
TEST FOR COLOR BLINDNESS.

DR. EDRIDGE-GREEN read a paper in which he said the first requirements of a test for color blindness was that color names should be used, and the person to be examined should employ and understand the use of the color names—red, yellow, green and blue. No test which ignored color names could be efficient. He had predicted that if color names were ignored in the Board of Trade tests, normal-sighted persons would be rejected; and this prediction had been fulfilled. Over 38 per cent. one year, and more than 42 per cent. another year, were found to be normal sighted, and to have been wrongly rejected. An engine driver or sailor had to

name a colored light when he saw it, not to match it. He had to say to himself: "This is a red light, therefore there is danger," and this was practically the same as if he had made the observation out loud. Even the method of matching colors should, in order to be efficient, be one of mentally naming them. In Dr. Edridge-Green's classification test he used colored materials of different kinds, as similarity, other than defined by the word "color," was the great source of error in a test of this kind. The color blind might be divided into two distinct classes, which were independent of each other but which might be associated. The first class included those who were not able to see certain rays of the spectrum; their spectrum was shortened at one or both ends. If a man had shortening of the red end of the spectrum, he would not be able to see a red light at a distance, though he might be able to pick out all the green wools in the classification test. A man of this kind, when shown the red light of Dr. Edridge-Green's lantern test, declared that there was no light visible, at once demonstrating his incapacity. The second class of the color blind made mistakes not because they could not perceive a certain color, but because they were not able to recognize the difference between the colors which was evident to normal-sighted persons. Both these classes were represented by analogous conditions in the perception of sounds. The first class of the color blind was represented by those who were unable to hear very high or very low notes, that was to say, those notes were not existent to them. The second class was represented by those who possessed what was commonly called a defective musical ear. Normal sighted persons saw six definite colors (points of difference) in the spectrum. The second class of the color blind saw five, four, three, two, or one color, according to the degree of the defect; and they confused the colors of the normal sighted which were included in one of their own. If the normal sighted were designated hexachromic those who saw five colors might be called pentachromic, those who saw four tetachromic, those who saw three trichromic, those who saw two dichromic, and the totally color blind monochromic. The degree of the defect would be recognized by the names given to different colors.

The pentachromic would miscall orange. The tetachromic might in addition make mistakes with regard to blue. It was not necessary to reject either of these two varieties, because he had never succeeded in making them confuse the colors red, yellow, green and violet. The trichromic were always in difficulty over yellow and miscalled it red, green, or red-green, and for practical purposes must be excluded as color blind. The dichromic confused red, orange, yellow, and yellow-green on the one hand, and blue-green, blue, and violet on the other.

MR. DEVEREUX MARSHALL agreed with Dr. Edridge-Green. A "look out" or an engine-driver had not to match colors at all, but simply to recognize as quickly as possible a white or colored light. It was most striking to find a person who could pass Holmgren's test with ease saying that a dull red light which was quite visible to a normal-sighted person did not exist at all, and that the room was quite dark. Those persons with a shortened red vision were the utmost danger when placed in responsible positions either at sea or on the railway. He wondered that the Board of Trade did not recognize this.

MR. HOLMES SPICER asked whether Dr. Edridge-Green would not demonstrate his cases and his method of testing, for at the present time most people used Holmgren's test because they knew of nothing better.

DR. EDRIDGE-GREEN said he would take an early opportunity of doing this.

CARD SPECIMENS.

The following were shown: Mr. Jessop: A Case of Sympathetic Ophthalmitis, with Cysts of Iris. Mr. G. W. Roll: A Case of Congenital Ophthalmoplegia. Mr. N. Bishop Harman: Two Cases of Fissura Facialis. Mr. MacCallan: Case of Lymphangiectasis of the Conjunctiva, with Microscopic Sections. Mr. Grimsdale: Paralysis of Both External Recti. Mr. Arnold Lawson: Paralysis of the Sympathetic.

PAMPHLETS RECEIVED.

- "Subconjunctival Dermoid Cyst," by J. M. Ball, M.D.
- "Uveitis, A Symposium," American Medical Association.
- "Chlorosis and Its Relation to the Eye," by G. F. Suker.
- "The Toxic Amblyopias; A Review," by G. E. de Schweinitz, M.D.
- "The Roentgen Ray in Ophthalmic Practice," by D. M. Campbell, M.D.
- "The Ear from a Medico-Legal Standpoint," by W. Scheppegrell, M.D.
- "Primary Sarcoma of the Iris," by C. A. Wood, M.D., and B. Pusey, M.D.
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- "The Best Means of Removing Nasal Obstructions," by J. D. Murphy, M.D.
- "Further Observations Concerning the Check Ligament," by J. E. Colburn, M.D.
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- "The Value of Bacteriological Examination of the Discharge in Acute Otitis Media," by E. B. Dench and F. M. Cunningham, M.D.
- "Present State of Our Knowledge Concerning So-Called Partial or Graduated Tenotomies and the Heterophorias," by J. E. Colburn, M.D.

A DISCUSSION ON THE TREATMENT OF SCLERO-KERATITIS.*

BY ARTHUR SANDFORD, M.D.

READ AT THE MEETING OF THE BRITISH MEDICAL
ASSOCIATION, SECTION OF OPHTHALMOLOGY.

I feel greatly honored in being asked to join in introducing for discussion at this meeting the subject of the treatment of sclero-keratitis, and I look forward with great pleasure to hearing the views of those distinguished colleagues who have consented to take part in the discussion, and to contribute some of the results of their wide experience to increase our knowledge of a subject which, to judge by the scanty literature available with reference to it, has not hitherto, perhaps, received that concentrated attention which its importance merits.

I may be permitted to say that I accepted with extreme diffidence your invitation to join in opening this discussion, as I feel strongly that I am unable to submit for your consideration any definite line of treatment which, from my own experience, I can regard as absolutely satisfactory. The most that I can attempt to do is to classify briefly such cases as have come under my observation, and to indicate the line of treatment which I have found most beneficial in each variety.

I believe that sclero-keratitis, pure and simple, apart from the many complications found associated with it, is an extremely rare affection, and that, with few exceptions, it is a local manifestation of acute rheumatism, or of some more or less modified form of tuberculous infiltration. This opinion may be influenced by the fact that my observations have principally been made in a country where rheumatic and scrofulous affections are both extremely prevalent.

I believe, moreover, that in no marked characteristic does sclero-keratitis differ essentially from similar manifestations which take place in other fibrous capsules, such as, for example, those of the joints or of the testes. The true significance of such affections occurring in the sclero-corneal fibrous tissue consists in their extension to or association

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with corresponding inflammatory conditions in the episcleral tissue, in the iris, or in any portion of the uveal tract, and in producing as secondary results opacity of the cornea or lens. Unfortunately, the great majority of cases only come under observation when some of the more serious complications have established themselves, and treatment must then be guided not alone by considerations confined to the original affection, but also by the nature and extent of these complications. In fact, the serious importance of the majority of those cases which I have seen arose from the severity of the uveal complications rather than from the originating sclero-keratitis, and the field of treatment was therefore enlarged beyond the limits laid down for discussion here to-day. The age and general condition of the patient must also exercise an important influence upon the choice of treatment to be pursued.

A large proportion of cases occur in youth or about puberty, associated with other evidences of scrofulous or tuberculous tendencies, and, in the case of females, with menstrual irregularities. In adult life I have rarely seen a case dissociated from constitutional rheumatism or rheumatic gout.

Having thus briefly referred to some of the more important conditions which must influence our choice of treatment, I shall now take up the limited reference which has been presented to us for discussion at this meeting.

By the term "sclero-keratitis" I understand an inflammatory cellular infiltration of the fibrous tissue of the sclerotic, extending more or less into the substantia propria of the cornea. This inflammatory condition may be accompanied by a superficial episcleritis, and may extend to any of the deeper and more highly organized intraocular structures. It may present itself in an acute or a chronic form, or in a post-inflammatory condition of sclerosis with opacity of the cornea, and an attenuated, discolored sclera. In those acute cases which are not tuberculous or scrofulous in origin, I have found the most favorable results from hypodermic injections of pilocarpin and the internal administration of sodium salicylate or of aspirin, whilst the eye is kept absolutely at rest by the application of light cotton-wool pads, which exclude light and keep up a constant dry heat. In some few

cases this last condition was found to cause so much discomfort that the use of the pad had to be discontinued.

Iritic complications are treated in the usual manner by atropine, but I believe that it is important, in the early uncomplicated stages, to avoid as far as possible the use of mydriatics, with their attendant increase of tension and interference with free drainage. In acute or subacute cases of tuberculous or scrofulous origin, similar precautions are adopted with regard to rest and protection of the eye; small doses of potassium iodide, combined with iodide of iron and triiodide of caffeine are given internally, with generous dietary suitable to the constitutional conditions, the patient being kept as far as possible in the open air. In some cases small doses of bichloride of mercury have been given, with apparently beneficial effect, apart from any evidence of specific taint.

With regard to subconjunctival injections in acute and subacute cases, I regret to say that, although in deference to the high authority of some of those who advocate this method of treatment, I still try to preserve an open mind with regard to the ultimate success of this mode of procedure, I must confess that up to the present my experience has not been of a favorable nature. In some cases, no doubt, this treatment seemed to have a beneficial action, and to hasten recovery, especially in the cases of injections of saline solutions, which might have had the effect of removing waste or morbid materials by, as it were, flushing the drainage channels. I have, moreover, been shown cases under the care of colleagues for whose opinion I have the highest respect, and who appeared to be satisfied with the results they obtained. On the other hand, I have seen a few cases in which the reaction was so severe that I am convinced the results were the reverse of beneficial. In my own experience I cannot say that I have met with results superior to those obtained by other methods of treatment.

When the inflammatory conditions have subsided, leaving a weakened sclerotic, liable to yield under the sustained pressure resulting from intraocular tension, with an opaque sclerosed cornea, I have found most benefit from a prolonged course of weak myotics, combined with a mild mercurial ointment, inserted into the eye and rubbed in by gentle massage applied through the closed eyelid. This procedure seems to

promote tissue change and the absorption or removal of the morbid interfibrillar cellular deposits. More important, perhaps, than any local treatment is the careful attention to the patient's general condition, to hygienic surroundings and suitable dietary; the use of the Turkish bath also is beneficial in certain cases.

To sum up: I believe that most cases of sclero-keratitis, apart from its complications, will, if taken in time, yield to the judicious use of iodides or salicylates or of aspirin (which as a substitute for sodium salicylate I believe to be of considerable value), combined with local rest and protection, and with suitable food and hygienic conditions. But I feel that the results are not thoroughly satisfactory, inasmuch as the treatment is necessarily protracted and irksome, while the disease has a marked tendency to recur upon the smallest provocation.

MR. MADDOX said he had recently seen a case of spontaneous cure without treatment after a duration of several years. Peritomy and yellow ointment he had seen do the most good. Dry heat was very advantageous, and to allow of its more continuous and pleasant application, Mr. Maddox showed his electrical eye heater, which could be incorporated in the dressings, and was so light that 270 could be sent by post for a penny. They could be used in hospital or at home.

DR. HILL GRIFFITH remarked that the disease was not, as its name might imply, confined to the sclera and cornea, for it was much more extensive as was proved by increased tension, vitreous opacities, and iritis; in fact, the anterior part of the eye was all affected. In bad cases no treatment was of any avail.

MR. MARSHALL thought that atropine should in nearly all cases be used. Myotics did not relieve the tension, and frequently led to a blocked pupil.

MR. WRAY said that the main stay in these cases was atropine, which should be used after the application of cocaine.

MR. WATSON GRIFFIN said in a case which he had had under observation with both eyes affected with much episcleral thickening, the condition improved in a course of three months' treatment at first with atropine and cocaine, and then with yellow ointment and atropine, and finally with

yellow ointment alone. Blisters were applied to the temples, while mercury, iodide, and general tonics were administered internally. The episcleral thickening subsided and the cornea cleared. For eighteen months the patient remained well, and then deep injection set in in the right eye, which was kept in check with adrenalin, which drug, however, could not have been used if there were any cyclitis present.

MR. BISHOP HARMAN remarked on the use of adrenalin for such cases. There was certainly temporary blanching of the eye, to the great delight of the patient, but the permanent result was *nil*. In a man who had tried everything Mr. Harman had used adrenalin, and it caused a deep-seated pain with cloudy vision and a diminished field. He thought the use of the drug might be dangerous from its producing spasms of the retinal arteries, as was seen to occur in cases of quinine poisoning.

DR. HERN said he had no intention of joining in the discussion, but the views expressed were so pessimistic that he felt bound to add a few words of encouragement. Although troublesome cases were met with, yet the majority tended to improve under treatment, and a great many got permanently well. A constitutional condition underlay them all, and that must be treated while the local treatment must not be neglected. The most useful treatment was an early and thorough peritomy and the inunction of mercury with the patient kept in bed.

DR. CLEGG said that the majority of cases he had seen were in women, and that the trouble was increased at the menstrual periods. He had found mercury very valuable. In the more superficial cases he had found yellow oxide of mercury ointment from 1 to 6 per cent., according to the condition of the eye, do the most good.

DR. GLASCOTT thought mercury and atropine should certainly be used, but the refraction should by no means be neglected.

DR. SANDFORD, in reply, agreed that the deeper parts of the eye were all affected. When talking of pilocarpin being used, he chiefly meant its use hypodermically and not locally. He thought it was often a delicate question whether myotics or mydriatics should be used. He had not found peritomy of much service.

BOOK REVIEWS.

UEBER DIE SKIASKOPIETHOEIE UND MEIN ELEKTRISCHES
SKIASKOPOPHTHALMOMETER, ETC. (ON THE THEORY OF
SCIASKOPY AND MY ELECTRIC SKIASCOPOPHTHALMOMETER).
By DR. HUGO WOLFF. Twelve Illustrations and One
Table. [Berlin: 1903. S. Karger].

This very careful and exhaustive study of skiaskopy and its practical value in measuring the refraction is particularly based on the electric mirror which the author has devised, and which furnishes a round source of light which can be turned in the direction of all meridians. It is supplied with an apparatus for measuring the distance of the mirror from the eye of the patient. This must be read in the original. As regards the theory of skiaskopy, that of the author does not seem to be materially at variance with those of Jackson, Thorington and others, whose works he does not seem to be familiar with. The monograph is well written, easily understood and a valuable addition to the literature on skiaskopy.

THE PUBLIC AND THE DOCTOR. By a Regular Physician.

DR. B. E. HADRA, Dallas, Texas. Price, 50 cents.

This little book is a well-meant attempt to teach the public a good many things about the right kind of a physician, which it very often does not seem to appreciate. That it will have the success it should have, we doubt.

The make up might be very greatly improved.

CHIRURGIE DE L'OEIL ET DE SES ANNEXES. By DR. FELIX TERRIEN. (311 Illustrations). [Paris: 1902. G. Steinheil]. (Surgery of the eye and its adnexa).

Terrien's surgery of the eye is a very comprehensive work, which is very profusely and well illustrated. As a peculiarity it treats of a great many non-surgical diseases of the eye, and might therefore almost be called a text-book on ophthalmology, preference being given to the surgery of the eye. At this late time it is hardly possible to give more than a compilation of all that is known of eye-surgery. But as a compilatory work it is greatly to be recommended on account of the simplicity of its descriptions and the many good illustrations.

ALT.

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